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ABSTRACT

Disabled persons cannot be identified with precision. Because of this, there can be no single unambiguous count of disabled persons. However, the Social Security Administration surveys indicated that in 1966 and 1978, about 17 percent of the population considered themselves as having some degree of work disability. Severe work disability increased from 6 percent in 1966 to 8.6 percent in 1978. In 1966, 19.2 percent of the severely disabled reported being in the labor force; in 1978, this proportion had decreased to 13.6 percent. The U.S. disability system consists of a social security track, complete with medical care and limited rehabilitation services; a public assistance track, also with medical care and rehabilitation services; a work injury track; special tracks for veterans; and a private sector track. Laws that alter minimum standards of employment, that set aside money or jobs, and that attempt to guarantee employment also characterize the system. Rising disability benefit rates lower labor force participation rates. Studies indicate that the vocational rehabilitation program has an impact on some clients, but studies need to be extended. The United States has developed a costly and reasonably adequate system of income benefits for the disabled. It is time to give more thought to the adequacy of rehabilitation efforts, with the full realization that rehabilitation, like any complex social goal, cannot simply be mandated into existence. (78 references) (CML)

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23. LABOR FORCE PARTICIPATION AMONG DISABLED PERSONS

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This paper explores the factors that influence the labor force participation of disabled persons. It considers the problems involved in defining and counting the disabled population, the nature of the relationship between aging and disability, the institutions through which we conduct disability policy, the effects of income transfers on the labor force participation of disabled persons, the usefulness of rehabilitation programs, and the value of civil rights programs on behalf of disabled persons. The paper concludes with some practical policy suggestions aimed at increasing the labor force participation of disabled persons.

Although the paper covers many topics, our aims are quite simple: We want to show how institutions encourage or discourage labor force participation and to suggest ways of improving the performance of our public policies.

Defining Disability

Unlike other groups whose rates of labor force participation are the subject of scholarly inquiry, disabled persons cannot be identified with precision. The very concept of disability resists definition. The scholarly convention is to think of disability in terms of a continuum

that begins with illness or impairment. Most people recover from such incidents; in some cases, however, the transient illness or other medically defined condition leaves the person with a functional limitation--some lasting inability to perform "normal" physical or mental functions, such as the inability to climb stairs or to maintain amiable relations with co-workers. Some people may adapt themselves to the functional limitation with no loss of productivity and thus maintain their attachment to the labor force. Others may perceive themselves as unable to carry on their normal, usual, and accustomed tasks because of their mental or physical conditions. Social scientists define such persons as disabled.

In the real world, the definition of disability seldom conforms to this typology. Social insurance programs, for example, equate disability with actual or potential wage loss, and the administrators of those programs often use physical impairment as a proxy for wage loss. Hence, the distinctions between impairment or functional limitation and disability are not honored. To be impaired is to be disabled. Furthermore, some of the programs equate disability with the inability to perform one's customary occupation; other programs have a more stringent definition and insist on the inability of performing any job--however that concept might be measured--as a condition of receiving benefits. Finally, some definitions of disability do not depend on the condition of real or potential wage loss so much as on the existence of an impairment or physical and mental condition that triggers prejudice on the part of employers. In this definition, policymakers are encouraged to think of disabled persons as a minority group who face

physical and attitudinal barriers. As a woman quoted in a popular health guide puts it, "We are not disabled; it is society which disables us by being so unsupportive" (Boston Women's Health Book Collective, p. 7).

The Number of Disabled People

Because no consensus has emerged on how to define disability, there can be no single unambiguous count of disabled persons. Even if we focus on a single standard such as a functional limitation that leads to wage loss, the fact remains that in a group of people with identical functional limitations, some will be disabled and some not. Factors such as age, education, personal motivation, alternative sources of income, physical barriers in the working environment, the attitude of employers toward the basic abilities of the handicapped, the condition of the labor market all will play a part in the outcome. For that reason, it makes as much sense to think of disability as a socio-economic phenomenon as a medically defined concept.

The results of surveys conducted by the Social Security Administration in 1966, 1972 and 1978 show that about 17 percent of the population considered themselves as having some degree of work disability in both 1966 and 1978. Despite this agreement, the surveys report a substantial increase in the degree of severe work disability, defined as a person unable to work altogether or unable to work regularly, from 6 percent of the population in 1966 to 8.6 percent in 1978. This outcome has important implications for labor force participation rates. In 1966, 19.2 percent of those in the severely

disabled category reported themselves as being in the labor force; in 1978, this proportion had decreased to 13.6 percent (McNeill, 1983).

From a policy standpoint, it might be preferable to substitute verified measures of impairment and functional limitation for a person's own perceptions of his or her ability to work. With such measures, we could begin to understand better why some people join the labor force and others choose to accept a disabled status or, alternatively, whether people with certain impairments and functional limitation face discrimination in the labor market.

One study that stands out in its use of longitudinal data and good measures of a person's impairment is Brehm and Rush's 1988 examination of the Framingham Heart Study data. Although the study does not use sophisticated econometric techniques to control for factors other than impairment that might affect labor force status, it makes imaginative use of a rich data set.

Brehm and Rush took the medical files of a cohort of the sample, all of whom are examined twice a year as part of the study, and gave them to persons with experience in making disability determinations for the Social Security Administration. The disability examiners used the data in the medical files to decide if the subjects' conditions warranted the finding that they met or equalled the medical listings that qualify applicants for social security disability benefits. The authors then traced the records for several years to determine whether the persons were still employed.

Brehm and Rush found some interesting things about the labor force participation of these impaired persons. Almost all of the men in the

prime age group were employed one examination before they were found to be impaired. By the time of their impairment, 90 percent were working. One examination later, more than a quarter of the group had died, yet 60 percent continued to work. Two examinations later, four-tenths of the group had died, but almost half were still employed. If these men survived, in other words, their labor force participation rates rivaled the participation rates found among the nonimpaired and the less severely impaired.

Using this data, Brehm and Rush see the disabled and the impaired as different from one another. They regard the disabled as a unique subset of the impaired who are distinguished by their socioeconomic and demographic characteristics and not by their state of health as it presumably relates to work ability. In our opinion, this conclusion reinforces the notion that socioeconomic factors play a large role in the definition of disability status and in our understanding of the numbers of disabled people.

Aging and Disability

In thinking about the definition and prevalence of disability, the relationship between aging and disability requires special consideration. It is no accident that in most discussions of disability the population under consideration is restricted to those persons normally in the labor force age group. When it comes to children and older persons beyond normal retirement age, difficulties arise. What, for example, is the appropriate activity to test for in the case of a retired person--recreation, activities of daily living, or something

else? And all persons become disabled before they die--some for long periods of time and others for only a micro-second--but presumably the disability rate and the mortality rate are not the same things.

The fact remains, however, that age and disability move together. The older a person is, the more likely he or she is to be disabled. Older people are less healthy, more impaired and functionally limited, and more disabled than younger people (M. Berkowitz, 1988).

Demography and disability combine to pose some intriguing policy questions, particularly when one considers the almost certain rise in the median age of the population between 1990 and 2040 from 33 to 42 years. The best estimates also posit that the percentage of the population 65 years or over should grow from 12.7 in 1990 to 21.7 in 2040 (Aging America: Trends and Projections, pp. 11, 13). We know that people are living longer as mortality rates in the older age groups decline, but we know less about comparable trends in morbidity and disability rates. Will the increasing number of older persons be healthier and able to participate in the labor force? Or will the same disability patterns prevail so that the increasing number of older persons will make for an increasingly dependent population?

The common sense interpretation is that health should improve with falling death rates, but the elimination of infectious disease may have fundamentally changed the meaning of mortality as a health measure (Ycas, 1987). Gruenberg (1977) maintains that we may be suffering from "failures of success". Mortality has been postponed, not by curing the underlying causes of death, but by curbing the lethality of their side effects. Those alive today who would have died in an earlier era are

not healthy; they are sick persons whose problems can be kept under control at a level of severity short of death.

As for empirical studies that attempt to measure the effect of age and disability on labor force and other forms of participation, Newquist (1984) uses National Health Interview Survey data to show that the number of older persons who report that they are unable to carry on their major activity has increased over time. Newquist hypothesizes that the older population may be restricting its activities in the face of a chronic condition in order to avoid serious illness consequences. Several other studies note this phenomenon of an increased willingness of persons diagnosed as having certain conditions or diseases to restrict their activities (Haynes et al., 1978), although Ycas (1987) casts some doubt on these inferences. He argues that in the first half of the 1970's, the trend was toward worsening health in age groups near retirement age; in the late seventies, the trend was toward stable or improving health.

What does this confusing evidence mean? The literature lacks good explanatory models (M. Berkowitz, 1988; Robinson, 1986). Our best guess, after examining the literature (Fries, 1980; Fries and Crapo, 1981; Manton, 1982; Manton and Stallard, 1982; Wing and Manton, 1981), is that the trends towards declining health among the older age groups seem to be reversing. Any conclusions about health trends must be hesitant ones, but, if the trend is as we guess it may be, that is encouraging. The problems of increasing labor force participation may lie in the social arrangements we devise and not the medical area.

The American Disability System--An Institutional and Historical Overview

Beyond these definitional, demographic, and epidemiological concerns, a discussion of labor force participation requires an overview of the many programs and policies that mark government and employer responses to disability. In general, these programs reflect two approaches to the situation: Either they make the person better off by raising his level of income, whether through insurance or through public assistance, or they attempt to correct the situation that limits the worker's labor force participation, whether through individual training (rehabilitation) or environmental restructuring (ramps in buildings). Many people have access to formal systems that combine the two approaches.

The Social Security Disability System.

The most widely available public system includes the Social Security Disability Insurance Program (SSDI), the Medicare program, and the Vocational Rehabilitation (VR) program. In 1986 these programs cost about $20.1 billion for disability benefits paid to approximately 2.8 million disabled workers, $8.8 billion for Parts A and B of medicare (expenditures for disability beneficiaries), and about 4.2 million for the rehabilitation of social security disability beneficiaries (All program data from Virginia Department of Rehabilitative Services, 1988).

Designed to fit into the social security program, this system places a heavy emphasis on retirement, rather than labor force participation. To receive benefits, a worker needs to prove that he is "unable to engage in substantial gainful employment" as a result of a

medically demonstrable condition that is expected to last a year. In other words, the successful applicant proves the inability to work. Once a worker passes the test, he receives a pension that paid an average of $471 a month in 1984, with an additional $131 if the worker had an eligible spouse and $139 for the worker's children (Social Security Administration, 1985. p. 1). Since the program tests the ability to work, benefits are either payable in full or not payable at all.

The history of Social Security Disability Insurance reflects the emphasis on retirement. Although the old age insurance program received legislative sanction in 1935, disability insurance did not arrive until 1956. To gain support for its passage, proponents portrayed it as a modest extension of old age insurance and as a prudent and socially necessary form of early retirement. As former commissioner Robert Ball recently expressed this idea, "it represented not a philosophical departure but a further rounding-out of the basic design" (Ball, 1988, p. 21).

This "rounding-out" encountered fierce opposition from the American Medical Association and the insurance industry and that prompted planners in the Social Security Administration to build safeguards into the program, such as a waiting period before the receipt of benefits and a stringent definition of disability that would dispel fears that the program would grow out of control. These features guaranteed that the bulk of the people in the program, once it was enacted, would be permanent labor force drop-outs who were automatically

transferred from the disability to the old-age retirement program at the age of 65.

Just as disability insurance reflects the general design of the social security program, so does Medicare for disability beneficiaries. The program makes no distinction between the elderly receiving Medicare and disabled persons receiving Medicare, except that the disabled person needs to wait longer than an elderly person before becoming eligible. A disabled person must be entitled to benefits for 24 consecutive months before he or she can receive Medicare. For both the disabled and the elderly, the program reimburses expenses incurred during hospital stays for acute conditions, as well as doctor's treatments related to those acute conditions. The program makes no provisions for long-term care or for what might be called "permanent continuing care," such as an attendant who might assist a paraplegic in transferring from a bed to a wheel chair.

In a similar sense, the disability insurance program has never made effective arrangements for the rehabilitation of disability beneficiaries. Although the program began with a rehabilitation referral system, that system never amounted to much. The people who applied for disability benefits were older and more severely impaired than the typical client of the vocational rehabilitation agency. The state vocational rehabilitation agencies, often housed in a state's educational bureaucracy, relied on a casework system to assess a handicapped person's vocational potential and to coordinate a series of services, such as vocational training and remedial medical care known as "physical restoration," that would make the person employable. The

program operated in a highly discretionary manner. Not all handicapped persons were required to use its services, nor was the program required to accept all of the people who applied for its services. Indeed, the counselors enjoyed considerable autonomy in judging a person's attitude. If a person was not "responsive from the first," in the words of an early rehabilitation publication, he could be labeled "infeasible" and denied services (Sullivan and Snortum, 1986, p. 187). Consequently, the handicraft nature of rehabilitation had little in common with the mass production system of social security disability determination.

Despite the very small number of disability insurance beneficiaries who were rehabilitated, the notion of spending money from the social security trust fund on rehabilitation continued to appeal to policymakers. The hope was to save money by freeing people from dependence on income maintenance benefits. At first, bureaucratic politics stalled the merging of the two programs. In 1965, however, Congress authorized the creation of the Beneficiary Rehabilitation Program. This program, run jointly by the Social Security Administration and the Rehabilitation Services Administration, reimbursed 100 percent of the costs for rehabilitating disability insurance beneficiaries. In time, this money, initially 1 percent of the year's disability insurance benefits (later raised to 1.25 and then to 1.5 percent) became a significant subsidy to the rehabilitation program. In 1976, it amounted to 102.6 million dollars, 9.2 percent of vocational rehabilitation expenditure.

That same year a gradual disenchantment with the Beneficiary Rehabilitation Program (BRP) began that culminated in the drastic

alteration of the program in 1981. Part of the disenchantment stemmed from the evaluations made by the Social Security Administration (SSA) to assess the efficiency of the BRP program. Although initial evaluations were ambiguous, the SSA estimated the benefit-cost ratio as 1.60 in 1970 and 1.93 in 1972. Independent evaluations soon began to cast further doubts on the program. The GAO examined a small sample of beneficiaries who had been terminated from the program after rehabilitation and found that 62 percent of the persons who left the benefit rolls would have left anyway without rehabilitation services. Other independent examinations found benefit-cost ratios slightly over one (M. Berkowitz, et al., 1982).

Because of the disillusionment with the program, possibly because of overblown expectations, it was discontinued. Instead, Congress instituted a program under which the VR agency would get reimbursed for its services plus a bonus only if the person left the benefit rolls and stayed off for a period of six months. Only modest use has been made of this program. As one sign of the diminished nature of the program, the Social Security Administration estimated that only 3.5 million dollars (or less than 3 percent of the previous program) would be required in 1982 (E. Berkowitz, 1987).

Despite the disappointment with the Beneficiary Rehabilitation Program, the SSDI program also includes a number of incentive provisions designed to encourage the rehabilitation of persons on the rolls. Most of these date from the 1980 amendments, in which Congress turned its attention to the difficulties that program beneficiaries had in leaving the rolls. The amendments included provisions for a more liberal trial

work period, the disregard of impairment-related expenses, and an extension of Medicare coverage after a person returned to work and left the rolls.

The Public Assistance Disability System.

The Social Security-Medicare-Vocational Rehabilitation system applies only to people with a record of labor force participation. A parallel public system consisting of Supplemental Security Income (SSI), Medicaid, and Vocational Rehabilitation assists those with a less permanent record of labor force attachment. This system, which requires a means test of its recipients, permits more state discretion than does the social security system, since all states (Arizona has no Medicaid program) administer Medicaid and Vocational Rehabilitation and some states supplement federal SSI payments. Hence, aggregate expenditure figures need to be considered with regard to the considerable variance that exists from state to state. In 1986, Supplemental Security Income cost 5.4 billion in disability-related expenditures (the program covers the blind, the elderly, and the permanently and totally disabled). Medicaid for disabled persons cost 15.6 billion dollars in the same year, and expenditures for the rehabilitation of SSI beneficiaries amounted to $600,000.

The small amount of money spent to rehabilitate SSI beneficiaries reflects many of the same factors that limit the investment made in the rehabilitation of social security beneficiaries. To qualify for benefits, SSI recipients need to meet the same stringent conditions as do applicants for social security disability benefits. Once they prove

they are "unable to engage in substantial gainful activity," and that they are in need of financial assistance, they make poor rehabilitation candidates. The investment in the rehabilitation of SSI beneficiaries has never equalled that in the rehabilitation of SSDI recipients, and since 1981 the disparity has been extreme--on the order of six or seven to one.

The Work Injury System.

One of the most important features of the American disability system lies in the separation of work-related disability from other sources of disability. Work-related disability falls into the realm of workers' compensation, which is restricted to the payment of benefits in the event of injuries incurred at work and arising out of the employment situation.

The program dates from the Progressive era and bears many of the distinctive characteristics of that era. Before 1911, an industrial accident created a legal right of action by an employee against his or her employer. State workers' compensation programs were developed to protect employees, spare them from the uncertainties of the judicial system, and limit the legal liability of employers. These laws specified particular payments that an employer was required to make to an injured employee. Because the laws were an outgrowth of the tort law system, benefit levels were as much as reflection of the legal principle of damages as of the loss of wages. The earliest laws emphasized cash payments for industrial injuries; over time states added medical care

and later rehabilitation services to the list of benefits (E. Berkowitz and M. Berkowitz, 1984, 1985).

Today's programs continue to be run by the states with no participation by the federal government. (The federal government does administer a significant program for its own employees as well as a program covering longshore and harbor workers.) Although the federal government has no direct administrative responsibilities in the state programs, it has maintained an interest in the state operations.

Unlike the social security program, which has welfare and insurance objectives and which is financed on a pay-as-you-go basis, the workers' compensation program functions as a true insurance program. Although a state-mandated program, workers' compensation is financed through the private sector (Worall and Butler, 1986) and like any private insurance program, the program is subject to the problems of adverse selection and moral hazard.

In workers' compensation, for example, problems arise related to the hiring of impaired people. If a person has already been injured, a second injury might lead to considerable costs that the employer must bear. Aware of the problem for many years, some states maintain what are known as "Second Injury Funds," which are designed to encourage the hiring of individuals with impairments by limiting the firm's liability in the event of a second injury. This problem is just one of many that make the labor force participation of people with disabilities difficult.

Not all states run second injury funds. Indeed, little about workers' compensation is consistent from place to place. Some states

permit self-insurance, either by individual firms or employer groups. In twelve states, the state competes with private insurance carriers in writing workers' compensation insurance. Six states have established exclusive state funds and do not permit competition from private carriers (although, in some of these states, firms may still self-insure).

Workers' compensation insurance is big business. Over two million families may receive a workers' compensation indemnity benefit in a single year. The annual cost of workers' compensation insurance programs is nearly $25 billion a year. With over five hundred firms selling compensation insurance, the 1982 combined market shares of the top four and eight sellers were only 24.4 and 38.4 percent respectively.

The Veterans System.

Although most work injuries come under the realm of workers' compensation, war injuries fall into a different category, since the Veterans Administration maintains a large bureaucracy that provides injured veterans with income, medical care, and rehabilitation. In 1986, for example, veterans compensation cost 5.7 billion dollars; means-tested pensions for disabled veterans (although not disabled as a result of wartime injury) produced expenditures of 1.1 billion; the bill for veterans hospitalization came to 2 billion dollars; and the various veterans rehabilitation programs cost .4 billion dollars. With the aging of the World War II veteran cohort, disability-related veterans expenditures represent an important area of future inquiry. Despite the

influence of veterans programs on American social welfare policy, these programs seldom receive the consideration of policy analysts.

The Private System.

Not all disability expenditures arise from the public sector or from actions mandated by the government. A private system, interlocked with the public system, consists of private disability and health insurance and makes limited use of public and private rehabilitation programs. At the end of 1985, 28 million people had short-term disability protection that was provided by private companies; nearly twenty-six million people had some form of private long-term disability income protection with nearly 75 percent of this coverage coming in the form of group policies. The typical long-term policy replaced about 60 percent of a person's pre-disability income and required the person to apply for social security benefits before receiving private benefits (Health Insurance Association of America, 1987, pp. 7-8).

The linkages between the various parts of the private and public disability systems are far from straightforward and create many disincentives for the labor force participation of disabled persons. Many people buy insurance policies to cover the risks arising from specific events, such as an automobile accident or an airplane crash. But such policies do not preclude the person or the insurance company from utilizing the tort system to claim damages from a reckless driver or a negligent airline. The resulting system contains significant overlaps among the various insurance coverages and requires complicated rules to establish which program or party should make the "first

payment" to the disabled person. Even with these rules, many possibilities exist for a disabled person to be "overinsured," and any recourse to the tort system typically involves the significant passage of time to conclude a case, with the effect of diminishing incentives for rehabilitation and labor force participation.

Direct Employment Incentives.

Each of these income maintenance-rehabilitation systems emphasizes income transfers, rather than the creation of jobs. Other laws and programs attempt to create direct incentives for the employment of handicapped persons. These programs range from "booster" programs, such as the President's Committee on Employment of Persons with Disabilities, which publicizes the capabilities of handicapped persons, to more direct requirements, such as laws that mandate accessible workplaces on the part of federal contractors or reserve certain jobs for the blind.

To understand these "job creation" programs, one might divide them into three groups. Some of the programs modify federal or state labor standards in an effort to encourage the employment of persons with disabilities. Others set aside portions of funds or reserve particular activities for handicapped persons, and still others prohibit prejudice on the part of employers in hiring workers or require modifications of the work place.

Amendments to the 1938 Fair Labor Standards Act illustrate the first group of programs. The Act, which has traditionally been a major administrative responsibility of the Department of Labor through its Division of Labor Standards, sets minimum wages and maximum hours for

all enterprises "engaged in commerce." Section 14 (c), added in 1966, authorizes the Secretary of Labor to issue special minimum wage certificates to handicapped workers based on their individual productivity. To protect these workers, the Section required employers to pay at least half of the minimum wage to workers with handicaps, unless the state Vocational Rehabilitation agency certified that a worker's productivity warranted a lower rate of pay. By the mid-1980s, the Department estimated that nearly 90 percent of the handicapped workers with special certificates were exempt from the 50 percent requirement. In 1986 Congress authorized the Secretary to issue a single certificate for an entire workshop or other place of business (Department of Education, 1988, p. 30).

Two examples of the second type of program date from 1938. In that year, Congress passed both the Randolph-Sheppard Act and the Wagner-O'Day Act, both of which affected the employment of blind persons. The former reserved employment in "vending areas" selling refreshments and other sundries in federal facilities for the blind. The latter authorized federal agencies to procure selected commodities (pens) and services from sheltered workshops serving the blind. In 1971, Congress broadened this program to include other severely disabled individuals (Department of Education, 1988, p.159).

The third group of programs, those dealing with civil rights and architectural barriers, may be the most important of all. Here we concentrate on Section 5 of the Rehabilitation Act of 1973. This act, passed without a great deal of Congressional scrutiny, contains the following famous passage: "No otherwise qualified handicapped

individual in the United States shall, solely by reason of his handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity conducted by an Executive agency or by the United States Postal Service." Other subsections require affirmative action in federal employment and the achievement of accessibility in federal buildings through the creation of a board charged with ensuring compliance with the Architectural Barriers Act of 1968. Section 503 obligates any contractor entering into a contractual agreement with the federal government in excess of $2,500 to take "affirmative action to employ and advance in employment persons with handicaps" (Scotch, 1984). Limited to the activities of the federal government, this Act nonetheless constitutes America's most sweeping civil rights statute on behalf of persons with disabilities.

As this essay is written, Congress has taken the Americans with Disabilities Act of 1989 under active consideration. Conceded a real chance of passage, this legislation would extend civil rights protection to cover such areas as private employment and public accommodations. It would bring the level of civil rights protection for people with disabilities to parity with other minority groups.

Civil rights laws reflect the influence of what Harlan Hahn has called the minority model of disability policy (Hahn, 1985, p. 8). Previously, Hahn states, thinking about handicapped persons centered on their functional limitations, and public policy focused exclusively on the problems of the handicapped individual. The model accepted the environment as a given. The minority model, in contrast, recognizes that the environment itself is subject to policy decisions. According

to this view, public policy should not help individuals to cope with the existing environment so much as it should combat prejudice and discrimination and, in so doing, alter that environment. Hahn concludes that the "extension of civil rights" should be the "primary means of resolving the problems of disabled citizens."

This overview of disability programs makes it clear that civil rights have not yet become the major vehicle for solving the problems of disability. Instead, the American disability system consists of a social security track, complete with medical care and limited rehabilitation services, a public assistance track, also with medical care and rehabilitation services, a work injury track, special tracks for veterans, and a private sector track. In addition, laws that alter minimum standards of employment, that set aside money or jobs, and that attempt to guarantee employment also characterize the American disability system. One cannot help but note that part of the system subsidizes retirement and encourages withdrawal from the labor force; another part explicitly seeks to encourage the entry of the handicapped into the labor force.

The Disincentive Studies

This description of the American disability system raises two major empirical issues concerning the labor force participation of persons with disabilities. One concerns the effect of income transfers on the labor force participation of handicapped persons. The other involves the efficacy of the various measures, whether rehabilitation services or civil rights statutes, designed to encourage the labor force

participation of people with disabilities. Do these measures work, or do their costs outweigh their benefits?

First, let us consider what might be called the disincentive issue. Building on the labor-leisure trade off, economists have long recognized the potential disincentive effects of transfer payments that are conditioned on the withdrawal of the beneficiary from the labor force. In particular, they have studied the effects of Social Security Disability Insurance on labor force participation. Leonard (1986), in a masterful summary of these studies, notes that they agree on the direction but not the magnitude of the effect. Although we do not understand this issue as well as we do the effects of minimum wages or unions on labor supply, Leonard concludes that the studies have succeeded in "drawing attention to the labor supply effects of SSDI, demonstrating the link between the growth of the SSDI beneficiary rolls and the decline in labor force participation rates, and establishing some range within which the true labor supply effect of social security disability is likely to fall" (Leonard, 1986, p. 64).

The studies stem from an easily observed trend. The nonparticipation rate of males, ages 45-54, reached a low of 3.5 percent in the early 1950s, and then it began to climb just as the Social Security Disability Insurance program got underway (Parsons 1984). The early studies of Gastwirth (1972), Swisher (1973) and Siskind (1975) made simple comparisons of the increases in the disability rolls and the decline in labor force participation. Hambor (1975) took economic factors into account, noting that the applicant rate increased with the unemployment rate. That suggested a degree of discretion in the labor

force participation of disability insurance applicants that made the decision to seek disability benefits appear more like other labor supply decisions.

Using data from the National Longitudinal Surveys, Parsons (1980) estimated 1969 labor force participation rates of men who were 45 to 59 years old as a function of SSDI benefits, welfare benefits, wages, a mortality index, age, and unemployment. He took wages in 1966 as a proxy for expected labor force earnings. He also utilized mortality from 1969 to 1976 as a proxy for 1969 health status. A person who died during this period was assumed to be in poor health in 1969. He found that the elasticity of nonparticipation with respect to the replacement rate was 0.63 and that it varied greatly with the mortality index.

Parson's findings are disputed by Haveman and Wolfe (1984) and Haveman, Wolfe and Warlick (1984) who estimated a relatively inelastic labor supply response to disability benefits, although not specifically to SSDI benefits. Haveman and Wolfe used a 741-person subsample of 45- to 62-year-old men in the 1978 Michigan Panel Study of Income Dynamics (PSID). They focussed on what caused labor force withdrawal rather than on the attractiveness of the SSDI program. They estimated a single grouped response to a set of disability-related transfers, including SSDI, Supplemental Security Income, veterans' disability benefits, other disability pensions, welfare and help from relatives.

Haveman and Wolfe found an elasticity of labor force non-participation with respect to disability income that ranged from .0205 in a replication of Parson's specifications to .0056 with the addition of dependent benefits, additional controls, selectivity corrections, and

eligibility adjustments. Haveman, Wolfe and Warlick (1984) discovered an extremely nonlinear response with much larger elasticities among more disabled persons and those with lower earnings. We agree with Leonard that these results caution against the use of simple linear models to capture widely varying behavior.

Leonard (1976) used the same data as Parsons and found that 30 percent of the variance in weeks out of the labor force in 1965 among men could be explained by variation in disability benefits, conditional on self-reported health, age and family characteristics.

In a 1979 study, Leonard used a sample of 1,685 men aged 45 to 54 drawn from the 1972 Social Security Survey of Health and Work Characteristics merged with social security beneficiary records and earnings histories. The major econometric problem for the study was that a large proportion of the sample were out of the labor force and had no observable wage. Because of the nature of the available data, Leonard was forced to use specific health conditions as a proxy for impairment status, and these health conditions give no indication of severity. Despite these limitations in data, he found that Social Security Disability Insurance had a large and significant effect in reducing labor supply: his estimate of the elasticity of labor supply in response to expected SSDI benefits was 0.35. A $180 increase in yearly benefits was discovered to increase the proportion of SSDI beneficiaries in the population by 1 percentage point. Leonard's work supports the hypothesis that a rise in SSDI benefits relative to the wage rate causes more men to apply and receive SSDI benefits and also causes their labor force participation rate to fall.

In an overall review of these and other studies, Leonard (1986) notes that, for all of their differences, the economic models of the labor force participation decision agree that expected income is an important variable. In practice, the studies differ in how expected incomes are imputed. We would add that these studies also demonstrate that the health condition of the person is an important variable, but the studies differ widely in how such a condition is measured. In short, disability transfer programs lead to some reduction in labor supply; how much is unclear. And, clearly, subjective factors, such as the perceived chances of obtaining benefits, play a role here. We know, for example, that disability benefits have been harder to get at some times than at others.

In workers' compensation (WC), as in social security disability insurance, the number of claimants bears a positive relation to the benefit level, but in WC, unlike SSDI, employers pay differential rates that may affect their behavior. WC utilizes the concept of experience rating. Small employers pay a nominal premium price (the manual rate) that reflects the expected accident and claims experience of all firms in the same line of business. Although nearly 85 percent of U.S. firms are manually rated, these firms employ less than 15 percent of those who work (Worrall and Butler, 1986). The remaining firms pay a premium that is based on a weighted average of their actual and expected loss experience. As premiums vary by firm size, so may safety incentives.

In WC, unlike SSDI, we must consider the effect of benefit levels on the provision of safety measures by employers, recognizing that firms may offer wage differentials to compensate for increased risk to

workers. Smith (1979) has reviewed the literature. Arnold and Nichols (1983), Butler (1983), Dorsey (1983), and Dorsey and Walzer (1983) each finds compensating differentials for risk-bearing and a trade-off between the acceptance of WC benefits and wages.

A number of economists have examined the relationship between benefit levels, waiting periods, retroactive periods, and claims frequency. The research has been done for cross-sections, time-series, and pooled cross-sections time-series data at the level of the establishment, industry, or the state. In two 1985 papers, for example, Worrall and Butler model the transition from a disabled to a nondisabled state as a function of wage, WC benefit, and other control variables. The principal finding is that the duration of disability varies directly with WC benefits and indirectly with the wage. Other research indicates that injury rates or claims frequency vary directly with WC benefits (Butler 1983; Butler and Worrall 1983; Chelius 1973, 1974, 1977, 1982, 1983; Ruser 1984; Worrall and Butler 1984; Worrall and Appel 1982).

In general, the findings from the WC experience echo those derived from an examination of the SSDI record. Applications and perhaps risk bearing and injuries are quite sensitive to changes in the levels of benefits. There is also some evidence that the duration of nonwork spells associated with the receipt of WC benefits is a function of the level of those benefits. Not a great deal of research has been conducted on the impact of a "full" replacement rate, but one should keep in mind that a significant number of people who receive WC benefits also obtain benefits from other programs.

The Efficiency of Rehabilitation

The efficiency of rehabilitation constitutes the second broad area of empirical studies that focus on the labor force participation of disabled persons. Here we focus on two aspects of the problem: the effectiveness of rehabilitation in general and the effectiveness of programs that attempt to rehabilitate beneficiaries of income maintenance programs, particularly workers' compensation.

Broadly defined, the rehabilitation process aids a person's recovery from the effects of an illness or injury and assists in a person's entry or reentry into the labor market. Both the public and private sectors provide rehabilitation. In the public sector, the Vocational Rehabilitation program has emphasized the treatment of the severely disabled, a category that includes mental retardation and mental illness. Services include medical diagnosis and some treatment, education and training, counseling and guidance, and placement. Counselors employed by the state VR agencies provide the bulk of the counseling and guidance services and may arrange for education, training, or work evaluation services from vendors.

Although some private sector providers have been retrained by insurance carriers for years, the growth of the private sector accelerated after California adopted mandatory rehabilitation as part of its workers' compensation program. Private sector counselors may provide or arrange for the same range of services as in the VR program, but their clientele tends to be restricted to accident cases, particularly workers' compensation cases.

It is not easy to discern the market failure that would justify the public VR program. Traditionally, the program has justified its existence on the grounds that its benefits outweigh its costs. However, it has been reluctant to adopt modern evaluation techniques, and it has resisted any attempts to measure demand for its services by some sort of an experimental voucher system.

The problem of "pre-program dip" in earnings is more intense here than in the employment and training programs. Eligibility for VR depends on the existence of a physical or mental impairment that interferes with the person's labor market chances. The majority of clients who enter the program show zero wages at entry. The program defines a person who remains in a job for 60 days as a successful closure. Since average costs of services seldom exceed several thousand dollars and benefits are defined as the difference between the zero wages at entry and the positive earnings at closure projected over the person's working life, the program tends to display a favorable cost-benefit ratio.

Although program evaluations, initially crude, have become more sophisticated in recent years, they still suffer from the absence of a true control group to measure the treatment effects, of an outcome measure of long duration, and of a disability status measure that takes severity into account (Worrall, 1988). As a means around the first problem, Dean and Dolan (1988) have used status 30 persons, people admitted to the program who received no substantial services, perhaps because they dropped out or moved away, as a comparison group. For an outcome measure, they utilize earnings data for VR samples matched with

records of the state employment service, thus allowing a longer period of follow-up than the traditional 60 days. This work show a positive treatment impact for some groups given a particular array of services. Gibbs (1988) uses a hazard rate analysis to explore a different outcome variable. Instead of earnings, he looks at duration of work and nonwork spells and finds, using status 30 persons as a comparison group, some positive treatment effects.

As with so much of the work in the disability area, the measures of disability status tend to be crude, usually medical condition classifications. Dean and Millberg (1988) have experimented with using functional assessment measures to standardize for health condition.

In general, efforts to rehabilitate the beneficiaries of income maintenance programs pose different problems than those faced by the public VR programs. One might consider, for example, the many problems involved in the rehabilitation of workers' compensation clients. Which of the many compensation recipients should be selected to receive rehabilitation services? What services should be offered? Who should authorize, provide, and pay for the services?

Examples abound of various approaches to these problems. California makes rehabilitation a matter of right for the employee at the employee's request. That request could come at any time including after the expiration of permanent partial benefits. In California, this provision, combined with the requirement that the employer/carrier is obligated to provide services once the plan has been approved, has led to a very costly system. Massachusetts has no provisions for a fixed number of days after which the case must be screened, but the employee,

in indicated cases, must meet at least once with the rehabilitation personnel in the WC agency. New York maintains a voluntary system under which the carrier is supposed to screen after a specified period, with little policing and no penalties for non-compliance.

States differ over the meaning of mandatory services. In California, the term means a plan where the provision of services is mandatory on the part of the carrier but the employee cannot be compelled to accept services. In Minnesota, Florida and New Hampshire, by way of contrast, the employee may be penalized for noncooperation or refusal, although such penalties are difficult to enforce. Someone who does not want to receive rehabilitation services makes a problematic candidate for the rehabilitation process.

The actual provision of rehabilitation falls into two stages: evaluation for suitability and executing the rehabilitation plan. These activities might be conducted by personnel from the workers' compensation agency, private sector rehabilitation personnel, or by the state VR agency. Minnesota emphasizes that it does not require rehabilitation but merely an evaluation for rehabilitation and the statute so states. However, even in that state, some carriers claim that by the time they go through the expense of evaluation, they might as well get into the rehabilitation plan.

The cost burden of rehabilitation differs by who performs the services. If the workers' compensation agency carries out evaluations and possibly supervises the delivery of services, the costs may well be met as part of the agency budget. That budget may be financed by separate state appropriation or by an assessment on all carriers and

self-insurers in the state. If the VR program performs the services, the costs might be met by the regular VR agency budget which is based on an 80 percent federal share and a 20 percent state share. However, some VR programs bill insurance carriers for services. Private sector counselors and providers, engaged in for-profit enterprises, charge for services at an hourly rate set by the state or fixed by market forces.

By far, the most common method of meeting rehabilitation expenses involves payment by the insurance carriers. Under the theory of workers' compensation, the worker waives rights to full recovery for all damages suffered. Instead, the worker receives compensation for a portion of wage losses, medical care designed to relieve the effects of the injury, and, presumably, rehabilitation services. Rehabilitation services thus become part of the compensation benefits and the worker has an entitlement only to benefits designed to restore his or her pre-injury condition.

The Effectiveness of Civil Rights Measures

Civil rights laws represent a different way to increase the labor force participation of handicapped persons. These statutes typically benefit people on the edge of the labor market who have not received a permanent entitlement to income maintenance benefits. Some argue that these people suffer the stigma of being handicapped and require special legal protection to overcome the forces of prejudice. Alternatively, such people might benefit from government-mandated accommodation of the work site to match their abilities.

Although these laws pose many analytical issues, the study of civil rights statutes remains in its infancy. The very notion of submitting these laws to economic analysis strikes many as beside the point. Advocates argue that the proposals of civil rights movements on behalf of blacks and women were not subjected to cost-benefit tests. Instead, Congress and the Courts implicitly ruled that civil rights transcended costs. Put another way, no cost was too high to pay in return for securing racial or sexual equality. Advocates of handicapped rights make similar arguments. As one has written, "Economics cannot be the issue around which decisions turn. The Supreme Court has long ago said that civil rights cannot be abrogated simply because of cost factors" (Bowe, 1980).

Economists have nonetheless attempted to assess the costs and benefits of enforcing civil rights laws. The Berkeley Planning Associates, for example, have analyzed the costs of making "reasonable accommodations" in order to employ disabled persons (Collignon, 1986). The term can be found in regulations that accompany Section 5 of the Rehabilitation Act of 1973, such as in the definition of a handicapped person as one "who is capable of performing a particular job, with reasonable accommodation to his handicap." The concept is elusive. Much of the law emphasizes the inherent productivity of handicapped people; the concept of reasonable accommodation implies a cost to making the handicapped worker as productive as his peers. To charge the handicapped person this cost by paying him or her less, however, invites a charge of wage discrimination, which is also against the law. But someone must bear the costs of accommodation.

Some factors mitigate the inherent dilemma. Fragmentary evidence indicates, for example, that expensive job modification is seldom required to accommodate handicapped workers. At times the required adjustment is relatively simple (O'Neill, 1976). One survey of 250 people in California with rheumatoid arthritis found that the ability to schedule one's own hours of work was a good indicator of whether a person would return to work (Yelin, 1979). In addition, the costs of accommodation can be used to off-set other costs. If the firm has invested a lot of specific training in the worker and if the firm faces the alternative of high disability maintenance costs for the worker, it pays to invest in accommodation to the point where the marginal costs of accommodation equal the dollars saved in pension costs and the costs of training a new worker.

Stating these conditions is a much easier task than measuring the various costs and benefits. Collignon (1986) notes the paucity of hard data. No studies exist of reasonable accommodation in firms that are not federal contractors and hence covered by Section 503. All of the studies have examined the accommodation of workers already employed by the firm and not the accommodation of workers seeking entry to the firm. Furthermore, physical barriers in the workplace do not appear to be as significant as the worker's training and education in explaining a disabled person's success in the labor market, yet we would like to know more about the relative weights of these factors.

Another undeveloped area of inquiry concerns the costs of discrimination against the handicapped. Becker's notions of discrimination (1957) might usefully be extended to cover discrimination

against the handicapped. The question becomes measuring an employer's taste for discrimination to determine how much he is willing to spend in order to have a labor force free of handicapped workers. Evidence does show that prejudice varies by the rate of impairment and that in general handicapped workers receive lower rates of return to education, experience, and health. Employers also appear to believe that disabled workers entail higher costs, because they are costly to supervise and less flexible in the jobs that they can do.

These findings imply that there would be benefits to eliminating discrimination. As Johnson (1986) notes, such an action would make for "more efficient use of labor, improved efficiency in the human capital market, and increase incentives for labor force participation by impaired workers." Nor, Johnson argues, can the market eliminate this prejudice, because much of the discrimination can be characterized as monopsonistic discrimination or as statistical discrimination.

Policy Implications

Where does this dense tangle of institutional and empirical detail leave us? Our overview of the field suggests that the economist would do better altering institutions at their margins rather than questioning the existence of those institutions. Furthermore, as our treatment of rehabilitation under workers' compensation suggests, we must be wary of making global generalizations. In short, institutions, by their very existence, constrain our behavior, and the institutions are extremely segmented, so that disability benefits in, say, Massachusetts are not the same as disability benefits in Illinois.

The situation resembles the ability of the economist to alter the minimum wage. Despite abundant studies of employment effects, minimum wages endure. At best, economists have succeeded in restraining the rise in minimum wage rates and in pointing out the differences between the wish of high wages and the deed of accomplishing them. Similarly, the disincentive studies show us that rising disability benefit rates lower labor force participation rates, but the best we can hope for is that policymakers understand some of the costs of their actions when they raise rates.

Economists too often assume a degree of conceptual certainty that simply does not exist in the area of disability. The policy issues in vocational rehabilitation, for example, lie beyond simple calculations of costs and benefits. Because we know that the program will survive, the issue is not whether the program can justify itself but rather how it might operate more efficiently, given the equity constraints imposed by Congress that dictate its mix of clients. Studies indicate that the program has an impact on some clients. Now these studies need to be extended to provide administrators with guidance on choosing clients and deciding the mix of services that would yield the most efficient outcomes.

Another promising line of reform lies in the relationship between income maintenance and rehabilitation. Here we might reconsider the relationship between VR and SSDI. The thrust of the VR programs and the rehabilitation efforts of the agencies which pay benefits, whether SSA or state workers' compensation agencies, is quite different. VR may give preference to whatever group Congress wishes to target, but

essentially it is dealing with persons who are motivated enough to apply to the program. The objective of the VR program is to improve those persons and possibly to restore them to the maximum functioning capacity given their physical and mental condition.

Most of the benefit programs have narrower objectives. They seek to save benefit dollars by providing services designed to restore beneficiaries to a work status. In the SSA program, the problem arises of identifying potential rehabilitees early enough. Once a person is on the rolls, that person has been disabled for at least six months and possibly for years. The applicant has been through a rather severe test in which the objective is to maximize impairment so as to qualify for benefits. All of these requirements make sense within the framework of the program's primary mission of providing retirement benefits as guards against the moral hazard problem.

We think that the objective of this program may now appropriately be broadened to include rehabilitation. Surely one neglected area is the identification of persons who are potential rehabilitation beneficiaries before they even apply to the program. These persons have probably been receiving short-term benefits from an employer or state plan for some months before they apply to the SSDI program. In addition, a measure such as the current "Social Security Work Incentives Act" deserves consideration. This bill, introduced as HR 4680 in the last session of Congress, would allow workers to retain their Medicare benefits and some of their benefits, even after they returned to work. There might also be some tentative experiments with differential rates

for disability insurance, depending on the employer's experience in keeping disabled people at work.

Workers' compensation programs, which have the advantage of earlier identification than SSDI, have experimented with various methods to select rehabilitation candidates. States are natural laboratories of experiment, but with some exceptions (Gardner, 1985, 1988), they have taken little advantage of the opportunities to test the efficiency of the various systems. Some random assignment studies are probably feasible in the state programs even if they are not acceptable in the VR programs.

Another variable of interest in the state WC programs concerns the methods of paying benefits. Radically different incentive and disincentives are set up by reason of these variations. Some states, such as New Jersey, pay permanent partial benefits (the costliest category of benefits) on an impairment basis. An award, once fixed, will not be changed if the worker goes back to his job. Such a system provides few disincentives for the worker to become rehabilitated once an award has been made. However, once the amount has been fixed, the employer has few incentives to encourage a rehabilitation program.

Other states fix benefits on the basis of loss of earnings or loss of earnings capacity. Here the employer has incentives to encourage rehabilitation if it means a reduction in benefits, but the employee has reasons to avoid any program which will reduce his weekly benefit amounts. Granted, the programs have bewildering and complex ways to assess benefits; still, much can be said about the efficacy of these different incentive structures. As an example, Minnesota has begun to

track its experiences under a fascinating system of differential benefits, designed with the incentive structure of both the employer and employee in mind.

Nor, in reforming our disability system, would we wish to dismiss the potential contributions of the private sector. Some firms have begun to experiment with a concept called disability management at the workplace, in which they make an effort to prevent their workers from leaving the labor force. The evidence of these efforts is largely anecdotal, but some firms have discovered, in the time honored manner of this literature, that hiring their handicapped is good business (Berkowitz and Berkowitz, 1989).

If the details of reform are sketchy, the general direction remains clear. We have developed a costly and reasonably adequate system of income benefits for the disabled. We now need to give more thought to the adequacy of our rehabilitation efforts, with the full realization that rehabilitation, like any complex social goal, cannot simply be mandated into existence. We submit this examination of disability definitions, rates, and systems as proof of that fact.

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